

2020 Annual Report on the Status of Department of General Services Programs that Support the State's Greenhouse Gas Reduction Efforts or Address Climate Change

In accordance with §2-1305 of the Environmental Article, the Department of General Services (DGS) submits its annual report to the Governor and the Maryland Commission on Climate Change on the status of programs that support the State's Greenhouse Gas Reduction Act (GGRA) efforts or address Climate Change. This report will highlight how programs run by the DGS Office of Energy and Sustainability reduce greenhouse gases and other air pollutants. This report shows estimated greenhouse gas reductions for the years 2010 through the 2019 calendar year.

DGS Energy Office

The DGS Office of Energy and Sustainability ("Energy Office") performs five primary functions that positively contribute to the State's greenhouse gas reduction efforts. The Energy Office purchases renewable energy, operates the Energy Performance Contracting (EPC) program, chairs the Green Purchasing Committee, and manages a statewide utility tracking database. Beyond these primary functions, the Energy Office also serves as the Energy Manager for DGS' 6.5 million square feet of facilities, engages in pilot programs, such as retro-commissioning existing State facilities, and fields calls from agencies on various energy conservation related topics. Beginning with the June issuance of Governor Hogan's Executive Order 01.01.2019.08, *Energy Savings Goals for State Government*, the Energy Office has taken on a leadership role in meeting the energy saving goal of the EO. The following describes each primary function of the DGS Energy Office in more detail.

Energy Commodities Purchasing

The Energy Office partners with USM to purchase over \$175 million annually of electricity and natural gas using purchasing strategies, that from FY12 to FY19 allowed the State to avoid over \$84 million in expenses related to these commodities. Included in the energy commodity purchases are three 20-year Power Purchase Agreements (PPAs) of renewable energy from two utility scale wind installations, and one solar installation.

Facility name	Initial Delivery Year	Size	FY 19 Total Generation (MWH)	FY 19 Total Expenditure (\$)
Mount St. Mary's (Solar)	2012	13 MW	20,118	\$4,334,639
Pinnacle (Wind)	2011	55.2 MW	173,208	\$13,908,698
Roth Rock (Wind)	2011	10 MW	25,344	\$2,344,330
Totals			218,670	\$20,587,667

As of 2020, the Renewable Energy Credits (RECs) produced by the facilities above surpassed the State's Renewable Portfolio Standard obligation. The Energy Office is planning on additional purchases of renewable energy soon as required under the recently enacted increase to the RPS.

DGS also currently has Solar PV installations at four agency buildings, with total capacity of 432 kW and generating approximately 520,000 kWh per year¹:

- Tawes State Office Building - 580 Taylor Avenue. Annapolis - 126 kW
- John R. Hargrove, Sr. DC & MS Center -700 E. Patapsco Ave. Baltimore - 106 kW
- Elkton DC & MS Center -170 E. Main St. Elkton - 74 kW
- Ellicott City DC & MS Center -3451 Courthouse Dr. Ellicott City - 126 kW

Renewable energy accounted for 13.2% of the electricity for State operations in FY 2020. It enabled the State to prevent approximately 143,526 Metric Tons of carbon dioxide equivalent (CO₂e) from entering the atmosphere. This is the equivalent of taking 30,473 passenger vehicles off the road for one year.²

Energy Performance Contracting (EPC)

An EPC is a multi-million-dollar energy project in which the cost of the project is paid for over time through guaranteed annual energy and operational savings. The Energy Office drafts and manages the contract that defines the processes and requirements of an EPC, and prequalifies the Energy Service Companies (ESCO) that will perform each project. The ESCOs provide the energy savings guarantee for each project. The Energy Office has been managing the State's EPC program since 2003, during which time 29 EPC projects have been initiated. The EPC program is the State's greatest single contributor to the development of energy efficiency and energy conservation strategies within State facilities.

The EPC program has provided considerable cost-effective energy savings and GHG reductions since its inception. Table A below indicates energy savings and CO₂ reductions associated with EPC projects since 2010.

¹ DGS does not own the Renewable Energy Credits (REC) for these installations.

² Calculated using EPA Greenhouse Gas Equivalencies Calculator, <https://www.epa.gov/energy/greenhousegas-equivalencies-calculator>

TABLE A

PROJECT	Construction Completion Date	Overall Annual Energy Reduction MMBTU ³	Annual CO2 Reduction Tons
DHMH-Spring Grove Hospital	02/01/10	267,504	14,979
University of Baltimore	02/28/10	31,465	2,990
Veterans Affairs	05/31/10	1,999	253
UMCES- Horn Point Lab	10/01/10	12,652	1,253
Work Force Technology Center	12/01/10	14,593	1,421
DGS Buildings	01/01/11	60,730	5,979
MDA-Agriculture	02/01/11	7,618	963
State Police	06/30/11	3,683	746
UM College Park- 9 buildings	01/01/12	59,060	3,538
UMCES- Chesapeake Lab	01/01/12	6,154	604
MTA	04/12/12	16,030	2,027
DPSCS- Jessup	06/30/12	224,504	14,412
MdTA	10/18/12	30,712	3,285
Towson Univ. Part 1	12/01/12	32,740	4,139
MAA	12/04/12	119,150	10,965
Bowie State University	01/31/13	6,791	547
Port Administration	Ongoing	100,307	5,380
UMBC- Part 1	07/31/13	20,855	2,637
UMCP- Athletic Dept.-	09/30/13	4,450	555
SHA -I	10/01/13	69,687	7,928
Department of Juvenile Services	1/6/2017	25,412	2,392
MDH Springfield Hospital	7/31/2018	14,641	1,205
MDH Finan Center	1/9/2019	9,557	1,131
MVA	4/1/2018	19,223	2,123
MDH Perkins and Holly Center	6/30/2020	25,051	3,490
DPSCS - WCI & NBCI	11/30/2019	22,758	8,163
TOTALS		1,207,326	103,106

Executive Order 01.01.2019.08

Governor Hogan's Executive Order titled, *Energy Savings Goals for State Government*, calls on the Energy Office to perform several tasks to help achieve 10% energy savings in State-owned buildings by 2029 based on an FY18 baseline. Tasks outlined for the Energy Office include: creating an accurate energy baseline for FY18, identifying 2 million square feet of buildings with cost-effective energy saving opportunities, performing energy audits on those buildings,

³ The energy reduction figures are for all fuel sources associated with a project (electricity, natural gas, fuel oil, etc.) converted to millions of Btus. Figures provided by ESCOs in their Phase II proposals as part of their savings guarantee. Actual savings for most projects have been higher.

presenting the building owners with the recommendations from the audit reports, tracking the energy use in those buildings after upgrades, and reporting progress towards meeting the overall goal to the Governor.

Beyond fulfilling the specific tasks outlined in the Executive Order, the Energy Office has formed a Working Group on Reducing Energy use in State Operations, whose members include representatives from the 20 agencies, or university campuses, that are responsible for 90% of the State government's energy use. The Working Group meets quarterly to coordinate efforts, collaborate on solutions, and share successes on reducing energy use in State facilities. The Working Group has met four times since September 2019.

In the 2020 legislative session, DGS introduced House Bill 662 to include the energy savings goal of Governor Hogan's EO into statute. The bill passed and took effect on July 1, 2020.

The Energy Office has performed energy audits on nearly 1 million square feet of buildings by October 2020 and is on track to complete 2 million square feet of audits by March 2020. The first Annual Report on the Executive Order was submitted to the Governor in September 2020.

Green Purchasing Committee

The Maryland Green Purchasing Committee is an interagency committee created by the Green Maryland Act of 2010, and is tasked with providing the State with education and training promoting environmentally preferable purchasing. The Committee develops and implements statewide green purchasing policies, guidelines, programs, best practices, and regulations which will provide benefits to the health and well-being of Maryland citizens and the environment.

The Committee initially focused on the creation of guidelines for state purchasers that would advance the conservation of natural resources and energy in state agency operations. Specifications for the procurement of certain environmentally friendly goods and services have since been created in order to outline such requirements. Additionally, the Committee has delivered training and organized educational events to further promote Maryland's leadership in environmentally preferable purchasing.

In FY 2020, environmentally preferable purchasing by Maryland State agencies totaled \$47,183,597. Environmentally preferred commodities purchased include office supplies, janitorial supplies, IT equipment, paints and coatings, and food service supplies with a cost savings of \$821,179 and greenhouse gas reduction of 158,159 Metric Tons of CO₂e accrued from these purchases. The GPC approved and published updated environmentally preferable specifications for lighting, food service ware, and bagged deicers.

The Energy Office also launched a Green Purchasing Training Module in July of 2020 as part of the Maryland Procurement Academy, where state procurement professionals will gain the basics of green purchasing to apply in their procurement practices.

Two awards were earned in 2020 in recognition of Maryland's leadership in the procurement of sustainable electronics and Information Technology (IT):

- Silver level recognition in the State Electronics Challenge for its procurement of sustainable IT and responsible end-of-life management in 2019. (Northeast Recycling Council, Inc. with funding from the U.S. Environmental Protection Agency.)
- EPEAT (Electronic Product Environmental Assessment Tool) Purchaser Award from the Green Electronics Council.
 - EPEAT-registered products must meet environmental performance criteria that address materials selection, design for product longevity, reuse and recycling, energy conservation, end-of-life management, and corporate performance.

Utility Bill Tracking Database “State Energy Database”

The Energy Office maintains the nation's most comprehensive statewide utility database for tracking energy consumption and cost for all state-owned and leased facilities. The database allows the Energy Office and other agencies to analyze their energy consumption patterns over time in order to identify poor performing facilities, and to track the progress of facilities undergoing energy efficiency projects. The database is used extensively during the development and measurement and verification stages of EPCs. It also is an instrumental tool that enables the State to engage in financially beneficial strategies for energy purchasing.

In FY 2020, building attributes such as square footage, build year, leased owned status, and primary use were added for the majority of the state's portfolio. Additionally, building/meter relationships were confirmed, allowing the State to confirm buildings that are individually metered for further building-level benchmarking and analysis, and to confirm campuses sharing utility meters for future submetering opportunities. The result was a comprehensive report of all State-owned and independently metered buildings, with their energy usage data so their progress may be tracked over time.

Maryland has led in data transparency by ensuring that the energy database is available in a public-facing version, hosted on DGS' website. The database is also available (with detailed cost and consumption data) to over 300 state agency users with log in privileges.